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An Overview of Electronic Bill Presentment and Payment Operating Models

Process, Roles, Communications, and Transaction Flows

Prepared by the Business Practices Task Force of NACHA's
Council for Electronic Billing and Payment

April 9, 1999

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Introduction

Electronic bill presentment and payment (EBPP) offers significant opportunities for customers, billers, financial institutions, and technology providers. This new technology creates a dynamic landscape, with healthy competition fueling the emergence of innovative providers, the development of new solutions, and market evolution. Despite the value represented by such innovation, however, it can be difficult for prospective newcomers to evaluate and navigate the various paths that could be followed to enter the market as a participant,

Like many other technologies that have developed in recent years, EBPP provides the greatest value to all participants when market adoption attains sufficient scale. The objective of this document is to clarify currently available paths, to remove barriers to entry resulting from confusion about specific roles and responsibilities, to accelerate market acceptance, and to increase adoption rates.

This document outlines current EBPP models, which have been categorized into Direct, Service Provider Consolidation (which includes variations widely referred to as "thick" and "thin" consolidation), and Customer Consolidation models. Each model describes a unique set of end-to-end processes and participants in enrollment, presentment, and payment / remittance phases. Illustrative diagrams and example scenarios are provided for each model.

The document is designed for Billers, financial institutions, technology providers, and other industry participants who seek information to guide their decision-making process, prior to entering the EBPP marketplace. The document is intended to provide an objective framework within which to evaluate available options.

The document is a collaborative effort of the EBPP Business Practices Task Force, under the guidance of NACHA's Council for Electronic Billing and Payment. The team is composed of volunteers representing major Billers, financial institutions, and technology service providers who have expertise in the EBPP industry. As individuals, the volunteer work group participants are also Customers, and as such, brought that essential perspective to bear in this analysis as well.

This document serves as an introduction to, and provides a basis for understanding of, the *EBPP Business Practices*, which is available on-line at http://www.nacha.org/billpay/businesspractices.htm . The authors expect that these documents and standards represent the first in a series. As innovation occurs and the EBPP market develops and matures, revisions will be necessary to ensure that the guidelines retain its value and relevance.

Direct Mod

In this model a Biller establishes an electronic billing capability on its own web site and provides its Customers with their billing information and the capability to effect bill payments directly from the site. The Customer, in a single online connection, accesses his/her billing information, reviews the bill(s), and provides the Biller with payment instructions .

Specialized services can be incorporated in the basic model, and there are numerous ways to implement these services. The essence of this model, however, is straightforward; its major characteristics are:

1. The Biller, having developed an EBPP service capability, solicits Customer enrollment through a variety of communications channels.

2. The Customer *enrolls* in EBPP services, by providing the Biller with the requisite information. The Customer also provides the Biller with information about the type of payment instruments that he/she would like to use to pay bills and the information that is required to access his/her bill on the Biller's web site. After the Customer has been enrolled in the service, the Biller makes the Customer's billing information accessible for online viewing and bill payment. In many cases, the Biller also notifies the Customer the bill is available for review. (Notification is typically an e-mail alert, but other forms of notification are possible.)

3. When the Customer logs onto the Biller's web site, security protocols insure that the Customer has access only to his/her own billing information.

4. Billing and other Biller-specified information is presented to the Customer, in HTML format. The amount and level of detail presented for review depends on the specific bill presentment service provided by a given Biller.

5. The Customer initiates bill payment, using the payment type and account selected by the Customer [1]. Based on these instructions, the Biller acts as the Customer's Payment Provider (CPP).

6. The Biller forwards the payment instructions to the Biller's Payment Provider (BPP).

7. The BPP originates payment execution based on these instructions

8. The Customer's Financial Institution (CFI) completes payment execution and deposits funds into the designated account.

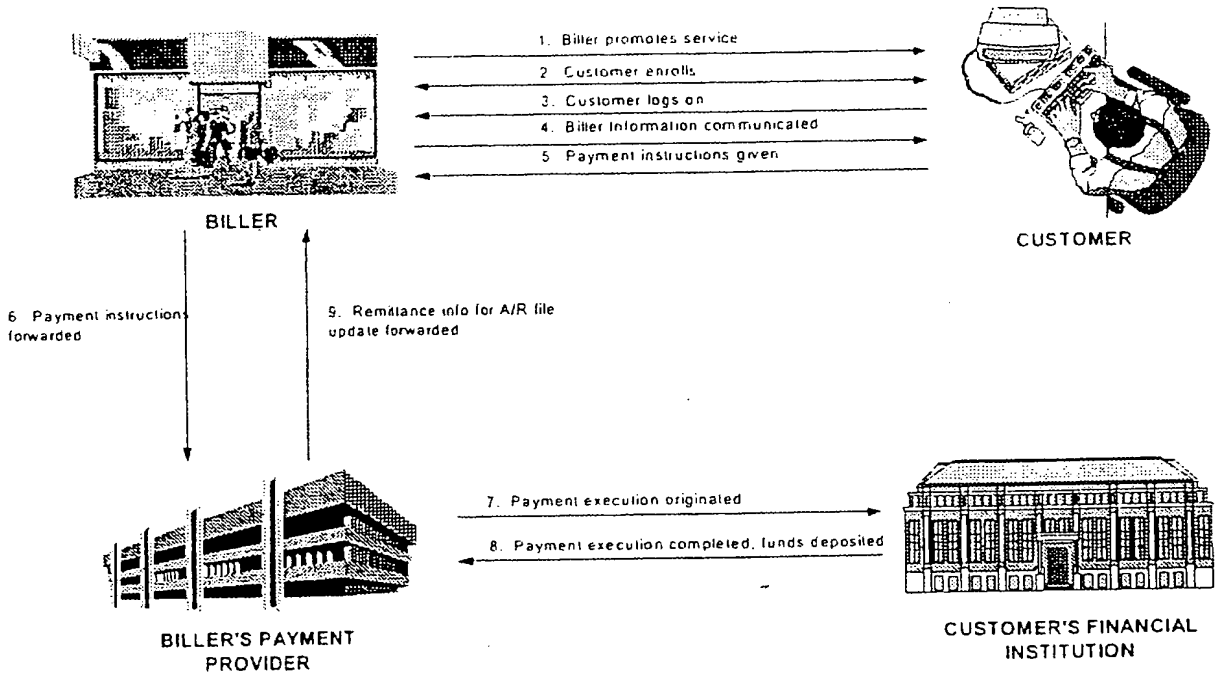
9. The Biller updates its Accounts Receivable system based on remittance information provided by the BPP.

What differentiates this model from others (presented below) is that the Biller executes both a bill presentment role, which is played by the Customer Service Provider (CSP), and a payment origination role, which is played by the CSP or the Customer Payment Provider (CPP), in other models. The Biller might

[1] Depending on the service offering, the Customer will either select the payment type and account at the time of initiation or will set the type/account at the time of enrollment.

elect to contract with a Biller Service Provider (BSP) to perform some or all of the activities noted above.

Direct Model Diagram



Example Bob Smith reads an insert in his electric bill and learns that he can receive and pay his electric bill via the Internet at the electric company's web site. That night, he accesses the company's site and reads about the program, how it will work, and what he needs to do to sign up for the service. Although he could enroll by mail, he elects to enroll on-line by providing the electric company with required information, including the payment options and the account numbers he plans to use for paying his bills. Later, having received an e-mail alert notifying him that his bill has arrived, Bob goes to the electric company's web site to look at his bill. After logging in as requested and following the security protocols established at the time of enrollment, Bob is able to see his electric bill and other information the electric company has made available to him. Bob considers setting up an automatic payment arrangement, but decides instead to pay the bill by choosing the payment amount, date, and payment method from the options he created at the time of enrollment.

The electric company stores Bob's payment request with the others it has received during the day and forwards them to its BPP, Atlantic Coast Bank. In processing the payment requests, Atlantic Coast Bank notes that Bob chose to pay his bill by a debit to his checking account at Mississippi Valley Savings and Loan. Accordingly, Atlantic Coast Bank originates an ACH debit entry to Mississippi Valley Savings and Loan. Atlantic Coast Bank then deposits funds, per the electric company's instructions, in the designated account and forwards remittance information to the electric company's Accounts Receivable operations center for processing.

Service Provider Consolidation Model

In this model, a central service provider consolidates electronic bills from different (types of) billers so that the Customer has a single site of access for viewing billing information and effecting bill payments electronically. The Biller forwards its billing information to one or more service providers that accumulate electronic bills from a variety of billers.

Two variations of the Service Provider Consolidation Model exist. The "thick consolidator" version assumes that the Biller Service Provider (BSP) is hosting bill summary and detail. The "thin consolidator" version assumes hosting of bill summary information by the BSP and bill detail by the Biller. A number of BSPs or Customer Service Providers (CSPs) can facilitate the collection and distribution of electronic bills. In addition, various types of payment service providers could play a role in executing the payment process. Although many parties, including the Biller, could perform more than one role, for purposes of the model, each role is described as if it were performed by a different entity.

1. The Biller, having developed an EBPP service capability, solicits Customer enrollment through a variety of communications channels. The Biller informs its Customers of a number of "shared presentment" web sites where customers can review bills from other companies as well as from the Biller.

2. The Customer *enrolls* in bill presentment and payment services with a Customer Service Provider (CSP) at the CSP's web site by specifying the accounts to be used in bill payment and by establishing a secure means of gaining access to the site (e.g., a PIN). At this time, the Customer also establishes the payment options he/she would like to select from to effect payment.

3. The Customer then *activates* the accounts for which he/she would like to establish electronic bill presentment and payment service and provides identification information necessary to effect this activation.[2] Billers dictate the terms of the payment: if a Biller restricts or requires specialized payment options, the Customer chooses from these options .

4. The CSP forwards the activation request to the Biller to be reviewed and processed. The Biller acts on the request for enrollment, which may, at the Biller's option, include additional authentication and security procedures. In most instances, after processing the request, a Biller provides a Customer with a response indicating that activation is complete.

5. After the Customer is enrolled in the service, his/her billing information is made accessible for viewing electronically. Typically, a Biller notifies its Customers (frequently via an e-mail alert or some other means of communication) when billing information has been made available.

6. The Customer first logs on to the CSP's web site and provides the required access security information to gain access to his/her bills. Billing and other Biller-specified information is presented to the Customer, in HTML format. While remaining transparent to the Customer, this process can be supported in several ways, and Customer billing data can be maintained in several locations. A Biller might decide to send only summary bill information to the BSP or CSPs in the "thin consolidator" implementation, because only summary level data is consolidated at the CSP. The bill detail is made

[2] Includes account number for the Biller being activated, billing address if different from the enrollment address with the CSP, etc.

available at the Biller's web site through an embedded hotlink that transports the Customer to the Biller's site. With the "thick consolidator" implementation, the Biller forwards both summary and detailed billing information to the BSPs or CSPs. A "thick" layer of data is consolidated at the Customer site. In either implementation the Customer can review bill detail to the degree of depth he/she requires. The decision on thick vs. thin consolidation depends on the amount of control the Biller wishes to retain over the bill detail.

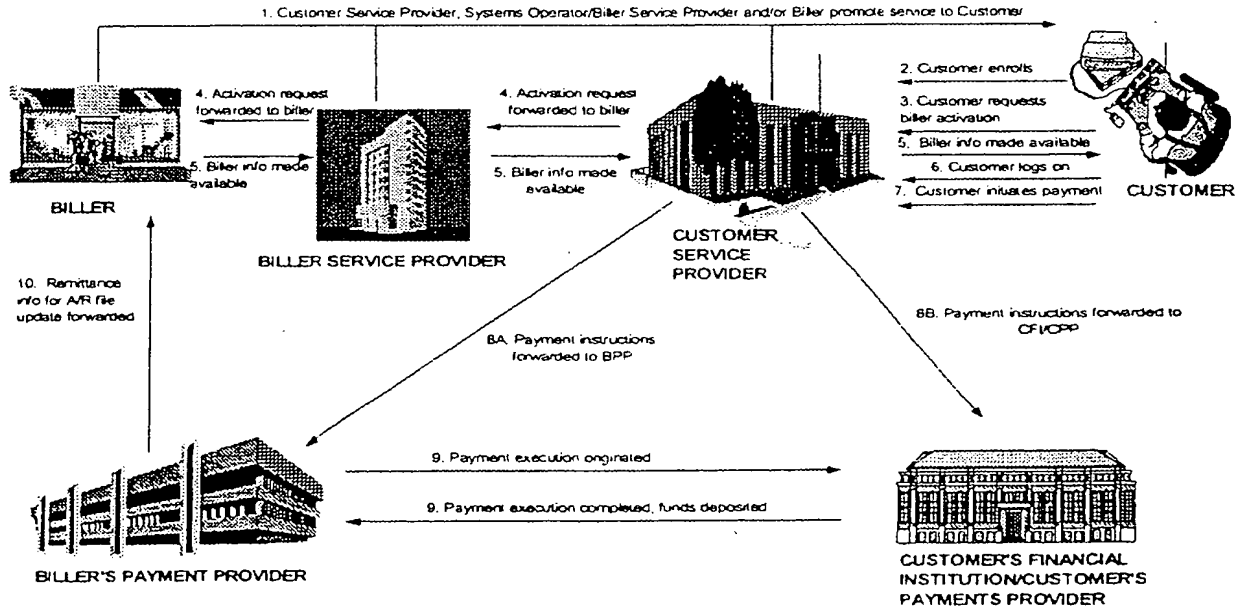
7. The Customer initiates bill payment, using the payment type and account he/she selected. Commonly, the Customer provides the CSP with information that is passed to a separate Customer's Payment Provider (CPP) entity to effect payment in compliance with his/her instructions as well. Once the Customer has specified his/her desired payment instructions, routing occurs in one of two ways outlined below.

8. Payment instructions are forwarded:
   a) to the Biller's Payments Provider (BPP) *or*
   b) directly to the Customer's Financial Institution (CFI)

9. In the first case the BPP originates the payment execution. In the second origination is not required. In both cases, the CFI completes payment execution and funds are deposited into the designated account.

10. The Biller updates its Accounts Receivable system based on remittance information provided by the BPP.

Service Provider Consolidation Model Diagram



Example: Jane Smith reads an insert in her electric bill and learns that she can receive and pay her electric bill via the Internet. The Biller provides information on a range of organizations (on-line services, Personal Financial Management software providers, and financial institutions) that are participating in this service, including the Mississippi Valley Savings and Loan (MVS&L), Jane's financial institution. That night Jane

goes on-line to the MVS&L site and reads about the program, how it will work, and what she needs to do to sign up for the service. She chooses to enroll on-line, a process that has been designed to leverage information that already has been assembled as part of MVS&L's home banking service access security. In this example, MVS&L is Jane's Customer Service Provider (CSP) for EBPP services.

Following enrollment in the MVS&L EBPP service, Jane scrolls through a listing of the billers participating in the service. She selects her electric company as the first Biller she would like to activate on the new service. She notes that a number of her other billers are also participants in the service, but she decides to try the service with one Biller and add others if the initial experience is positive.

MVS&L forwards Jane's activation request to ZapBills, the EBPP systems operator with which MVS&L is affiliated. ZapBills forwards Jane's service request to Jane's electric company, which enrolls Jane in the service and sends a confirmation notice to her. The electric company sends the notification both by e-mail to the address Jane has specified in her activation request and by U.S. mail to Jane's billing street address. Note that in this example, ZapBills is acting as the electric company's Biller Service Provider (BSP) as well as the operator of the EBPP service. (In another scenario, these roles might be performed by two, different companies.)

Although the electric company could request direct Customer confirmation for future activations through other services or presentment site operators, it is satisfied with the Customer enrollment procedures used by MVS&L and ZapBills. The company decides, therefore, not to impose an additional level of Customer authentication and security to activate the service for Jane. The electric company then flags its billing system with the appropriate routing information for future use. Jane's future electric bills should be sent to her at the MVS&L web site in a process and data format compatible with ZapBills' electronic bill presentment service.

Several weeks later, Jane receives an e-mail notification that her electric bill is available for review on the MVS&L web site and goes to the site to look at it. After logging in as requested and following the security protocols established at the time of enrollment, Jane is able to see her electric bill and other information the electric company has made available to users of the service. Jane pays the bill by selecting her MVS&L checking account as the payment method, specifying the date on which the payment is to be made and the amount of the payment.

MVS&L forwards Jane's payment request with the others it receives during the day to ZapBills and initiates a payment to Jane's electric company, routing the payment to the electric company's BPP, Atlantic Coast Bank. When payment is received, Atlantic Coast Bank deposits funds in the account specified by the electric company and forwards remittance information to the electric company's Accounts Receivable operations center for processing.

Customer Consolidation Model

In contrast to the other presentment models, in a Customer Consolidation Model, the electronic content (bills) is delivered *directly* to the Customer. The Biller maintains control of bill detail until delivery to the Customer. The Customer, then, is able to control and store the bills and to integrate this work into his/her off-line programs and processes.

Specialized services can be incorporated in a Customer Consolidation model, and there are numerous ways to implement these services. The essence of this model, however, can be summarized as follows:

1. The Biller, having developed electronic bill presentment and payment service capability, solicits Customer enrollment through a variety of communications channels.

2. The Customer indicates interest in EBPP services and provides the Biller with information required to *enroll* in the EBPP service. The Customer specifies the accounts to be used in bill payment and establishes a secure means of gaining access to the site (e.g., a PIN).

3. Once enrolled, the Customer reviews a list of billers that have bills available for delivery. The Customer then *activates* the desired billers' accounts, provides identification information necessary to effect this activation,[3] and enables delivery of bills.

4. After the Customer is enrolled in the service, his/her billing information and other biller-specified information is delivered electronically. The Customer logs onto the EBPP service and provides required access security information, which insures that access is provided only to the Customer's own billing information.

5. The Customer can review and store bill information provided by the Biller. (The amount and level of detail available depends on the specific service provided by a given Biller.)

6. The Customer initiates bill payment by selecting the payment method, account, payment amount, and payment date. The Customer's payment instructions are sent to the Biller/BSP.

7. The Biller (or a third party) forwards the payment instructions to the Biller's Payments Provider (BPP), and the Biller updates its Accounts Receivable system based on remittance information.

8. The BPP originates payment execution, which is completed with cooperation of the Customer's Financial Institution.

9. The Biller's financial institution deposits funds into the designated account at the Biller's Bank.

Note that in this model, the Biller may play bill presentment roles that are played by the CSP in other models. The Biller might also elect to play payment origination roles, played in other models by the CSP or CPP, or elect to contract with a Biller Service Provider to perform some or all of the activities attributed to the Biller/BSP in the discussion above. (For instance, the Biller's bank may play the role of BSP and BPP in some situations.)

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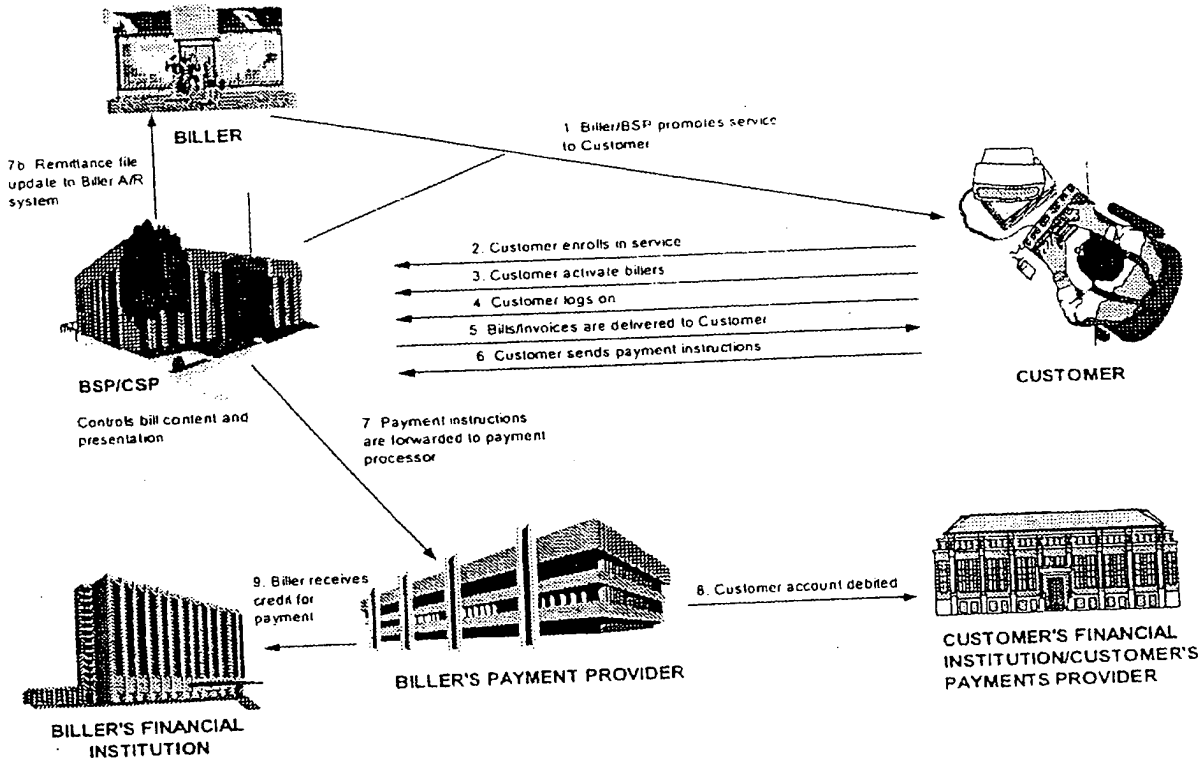
[3] This includes the account number for the billers being activated, the billing address if different from his/her enrollment address, etc.

Customer Consolidation Model Diagram



Example: Bob Smith reads an insert in his electric bill and learns that he can receive and pay his electric bill, as well as other bills, via the Internet. Upon installing the necessary software, he reads about the program, how it will work, and what he needs to do to sign up for the service. He decides to enroll on-line, a relatively brief process that has been designed to leverage information that already has been collected. The necessary information is forwarded in a secure environment.

Upon confirmation of his enrollment, Bob reviews the list of available billers, selects the bills he wants to receive electronically, and activates the billers. After logging in as requested and following the security protocols established at the time of enrollment, Bob has access to his bills when they become available. Upon delivery of his electric bill, Bob reviews the bill and any other information that the electric company has made available to him. After reviewing his bill, Bob confirms the payment method he wishes to use to pay this bill by clicking the "Pay" button on the bill. Bob maintains control over the payment amount and date. He may also be able to authorize automatic payment of future bills.

Bob's payment instructions are sent to the electric company, where they are stored in a payment warehouse, with other future-dated payments, until the appropriate payment processing date. Note that in this example, the electric company is acting as its own Biller Service Provider (BSP). Alternatively, the electric company could have contracted with its bank, or another third party, to provide both BSP and BPP services.

On the processing date, Bob's payment instructions are forwarded to the electric company's designated payment processor (BPP), Atlantic Coast Bank. Upon processing the payments requests, Atlantic Coast Bank notes that Bob chose to pay his bill by a debit to his checking account at Mississippi Valley Savings and Loan. Accordingly, Atlantic Coast Bank forwards ACH payment instructions to Mississippi Valley Savings and Loan. When payment is received, Atlantic Coast Bank forwards funds to the electric company's bank, which deposits the funds, according to the electric company's instructions, in the designated account. At the same time that the payment is processed and forwarded to Bob's bank, the payment warehouse forwards remittance information to the electric company's Accounts Receivable operations center for posting to Bob's account, so that Bob's account properly reflects his payment.

Glossary

Activation - The process of a Customer selecting a biller account for bill presentment, agreeing to biller terms and conditions and establishing the account within the Biller's and CSP's systems.

Amount to be Paid - The amount that the Customer has authorized for payment to his Biller

Authentication - The process of reliability that determines the identity of a party.

Bill/Invoice - An electronic or paper document sent to a Customer, associated with a payment due.

Bill Consolidator - A Bill Service Provider that consolidates bills from other Bill Service Providers or Billers and delivers them for presentment to the Customer Service Provider.

Bill Detail - Information from a Biller that provides invoice line level information to a Customer. This may include specific billing event information such as credit card charges, telephone calls, or kilowatts used. Also: Invoice Detail.

Bill Notification - A process whereby a Customer is notified that an electronic bill is available for review and payment.

Bill Summary - The summary information from a Biller that a Customer must understand, so that the Customer knows what is owed. Typical information may include; Amount Owed, Date Due, Biller, Biller's Account Number. Also: Summary Record, Summary, Invoice Summary, Invoice Summary Record, Bill Summary Record.

Biller – A company or organization that sends a Bill or Statement to a Customer, usually sends a request for payment for a product or service.

Biller Payment Provider (BPP) - An agent (usually a financial institution) of the Biller that originates and accepts payments on behalf of the Biller.

Biller Service Provider (BSP)- An agent of the Biller that provides an EBPP service for the Biller.

Commercial Relationship- An agreement between parties to do business together for the purpose of EBPP. It may or may not include a contract.

Customer – An individual or entity that receives goods or services which are the subject of bills or statements. The typical receiver of a bill.

Customer Account Information - A detail field within Remittance Information, usually the account number assigned to that customer by the Biller. This can also be used to mean the Customer's billing name and address as well as any other information that the biller uses to identify the Customer.

Customer Payment Provider (CPP) - An agent (usually a financial institution) of the Customer that originates payments on behalf of the Customer.

Customer Service Provider (CSP) – An agent of the Customer that provides an interface directly to customers, businesses or others for bill presentment. CSP enrolls customers; enables presentment and provides customer care, among other functions.

Electronic Bill Presentment and Payment (EBPP) - Electronic presentment of customer bills that contain a mechanism that enables the Customer to pay the bill.

Electronic Payment - Any non paper-based type of payment.

Email Address - A digital address, in this document usually belonging to the Customer.

Enrollment - The process associated with a Customer establishing a relationship with a CSP.

Funds - A vehicle for the storage of value. Usually refers to value on deposit at a bank.

Interactive Financial Exchange (IFX) - A standard for the exchange of financial data and instructions independent of a particular network technology or computing platform. It builds on previous industry experience including OFX and GOLD, which are currently implemented by major financial institutions and service providers to enable electronic exchange of financial data between themselves and their customers.

Payment - A vehicle to effect the transfer of value. Typically transfer funds from one bank depository to another. May also transfer funds to or from a debt instrument such as a credit card. Also Funds Transfer.

Payment Due Date- The date under which the Biller requires payment from the Customer.

Payment Instructions – Instructions for routing/posting the payment (e.g. into which bank account payments should be deposited.

Payment Instruments- The instruments required to initiate a payment (e.g. checks, credit card, debit cards).

Payment Method – The method used to facilitate and process payment. Includes Payment Instruments and Payment Systems.

Payment Posted Date- The date under which a payment is posted to an account.

Payment Systems- A system or network used to process payment (e.g. ACH, debit card and credit card networks).

PFM – Personal Finance Management or Manager - Software used by a Customer to manage his/her checking account, etc. Often includes categorization, reporting and graphing capabilities.

Recipient - An individual or business, other than the Customer, that receives bills or notices and pays them, such as a family member.

Registration - The process by which a Biller establishes a relationship with a BSP. Registration is also a process of BSPs and CSPs establishing relationships with each other. It is expected that a BSP and CSP will have a relationship before they exchange any account activation information. It is expected that a biller will have a relationship with a BSP before a CSP will start sending activation requests to a BSP for that

biller. It is also possible that the Biller will have a relationship with a CSP before that CSP sends activation requests for that biller.

Remittance Information - Information required by the Biller to post Customer bill payments effectively.

Remittance Method - The method used to deliver funds and remittance information

Statement/Notice – An electronic or paper document that does not have a payment due associated with it - sent to a recipient.